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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,220	10/26/2005	R .Rogers Yocum	BGI-154US2	2729
959 7590 05/25/2007 LAHIVE & COCKFIELD, LLP ONE POST OFFICE SQUARE BOSTON, MA 02109-2127			EXAMINER FRONDA, CHRISTIAN L	
			ART UNIT 1652	PAPER NUMBER
			MAIL DATE 05/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,220

Applicant(s)

YOCUM ET AL.

Examiner

Christian L. Fronda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-49 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

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DETAILED ACTION

Election/Restriction

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

- | | |
|-------------|---|
| Invention 1 | Claim(s) 1-15, drawn to a process for enhanced production of pantothenate comprising culturing a microorganism having a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway. |
| Invention 2 | Claim(s) 16-22, drawn to a process for enhanced production of pantothenate comprising culturing a microorganism having a deregulated pantothenate biosynthetic pathway, a deregulated isoleucine-valine (ilv) biosynthetic pathway, and a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway. |
| Invention 3 | Claim(s) 29, drawn to a process for producing pantothenate comprising culturing a microorganism having a deregulated pantothenate biosynthetic pathway under excess serine. |
| Invention 4 | Claim(s) 34, 35, drawn to a composition comprising pantothenate. |
| Invention 5 | Claim(s) 36-41, drawn to a recombinant microorganism for the enhanced production of pantothenate, said microorganism having a deregulated pantothenate biosynthetic pathway, and a deregulated methylenetetrahydrofolate biosynthetic pathway. |
| Invention 6 | Claim(s) 42, 43, drawn to a process for producing pantothenate comprising culturing a recombinant microorganism having a deregulated panB gene, a deregulated panD gene, and at least one deregulated isoleucine-valine (ilv) biosynthetic enzyme-encoding gene. |
| Invention 7 | Claim(s) 44, drawn to a process for producing pantothenate comprising culturing a microorganism having a deregulated panB gene, a deregulated panD gene under conditions of excess serine. |

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- Invention 8 Claim(s) 45, drawn to a process for producing pantothenate comprising culturing a recombinant microorganism having a deregulated panB gene, a deregulated panD gene, and a deregulated methylenetetrahydrofolate (MTF) biosynthetic pathway under conditions of excess valine.
- Invention 9 Claim(s) 46, drawn to a process for producing pantothenate comprising culturing a recombinant microorganism having a deregulated panB gene, a deregulated panD gene, and a deregulated glyA gene under conditions of excess valine.
- Invention 10 Claim(s) 47, drawn to a process for producing pantothenate comprising culturing a recombinant microorganism having a deregulated panB gene, a deregulated panD gene, and a mutated, deleted, or disrupted purR gene under conditions of excess valine.
- Invention 11 Claim(s) 48, drawn to a process for producing pantothenate comprising culturing a recombinant microorganism having a deregulated panB gene, a deregulated panD gene, and a deregulated serA gene under conditions of excess valine.
- Invention 12 Claim(s) 49, drawn to a process for producing pantothenate comprising culturing a recombinant microorganism having a deregulated panB gene, a deregulated panD gene, a deregulated serA gene, and a deregulated glyA gene under conditions of excess valine.

2. The inventions listed as Inventions 1-12 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

A same or corresponding technical feature shared among Inventions 1-12 is comprising culturing a microorganism having a deregulated pantothenate biosynthetic pathway for overproduction of pantothenate. However, this technical feature has already been taught by Sahm et al. (Appl Environ Microbiol. 1999 May;65(5):1973-9).

Sahm et al. teach construction of a recombinant *Corynebacterium glutamicum* having a deleted *ilvA* that is transformed with plasmids to overexpress genes of ketosiovalerate (*ilvBNCD*) and D-pantothenate (*panBC*) synthesis, and overproduction of pantothenate using this recombinant *Corynebacterium glutamicum*.

Thus, the same or corresponding technical feature is not special since it was known in the prior art and therefore cannot make a contribution over the prior art. Since the inventions lack

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the same or corresponding special technical feature, then the inventions listed as 1-12 are not so linked as to form a single general inventive concept under PCT Rule 13.1.

3. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).
4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian L Fronda whose telephone number is (571)272-0929. The examiner can normally be reached Monday-Friday between 9:00AM - 5:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura N Achutamurthy can be reached on (571)272-0928. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLF


TEKCHAND SAIDHA
PRIMARY EXAMINER